REMARKS/ARGUMENTS

Claims 1, 5-6 and 24 have been amended herein solely to clarify the claims in response to the Examiner's § 112 assertions. No substantive amendments have been made to the claims. Claims 7-23 have been previously withdrawn as directed toward a non-elected invention. Claims 1-6 and 24-36 are currently pending in this application, and are at issue herein.

§ 112 Claim Rejections

Claims 1-6 and 24-36 stand rejected under § 112, second paragraph, as allegedly being indefinite. Specifically, the Examiner takes issue with the limitation that attribute information is obtained that is not based on a particular individual.

In response, Applicants have amended independent claims 1, 5-6 and 24 to recite that the attribute group of the customer is determined from information obtained from the image without determining a personal identity of a particular individual in the image. This is in line with the Examiner's interpretation of the claims as set forth in paragraph 5 of the Office Action.

Accordingly, Applicants submit that the § 112 claim rejections have been overcome, and respectfully request withdrawal thereof.

§ 103 Claim Rejections - Claims 1, 5-6 and 24-30

Claims 1, 5-6 and 24-30 stand rejected under § 103(a) as obvious over U.S. Patent No. 6,237,647 to Pong et al. ("Pong") in view of U.S. Patent No. 6,332,139 to Kaneko et al. ("Kaneko"). Applicants respectfully traverse the claim rejections for at least the following reasons.

Independent claims 1, 5-6 and 24 each recite that image information of a customer is obtained, and further recite that an attribute group of the customer is determined from information obtained from the image without determining a personal identity of a particular individual in the image. Neither Pong nor Kaneko, taken alone or in combination, disclose or suggest these limitations.

Initially, Pong does not determine any attribute of a customer. The system described in Pong is an automatic refueling station which detects the arrival of a vehicle and identifies the vehicle and the customer associated with the vehicle via information stored on an identification transponder, or tag, affixed to the vehicle windshield. (Pong, Abstract, lns. 3-7; col. 1, lns. 62-67; col. 6, lns. 32-37). Pong discloses identifying the vehicle by its year, make and model and/or vehicle identification number. (Pong, col. 6, lns. 40-42). Pong discloses that the customer can be identified by a preassigned customer account number. (Pong, col. 6, lns. 42-43).

Pong also provides facial recognition based on a shot image and, in accordance with a result thereof, recognizes a particular individual and determines who he or she is. (Pong, col. 2, lns. 44-46). In Pong, identifying the customer is important, especially when the system of Pong is used for surveillance purposes, such as taught at col. 13, lns. 36-47 of Pong. In this passage, the camera 850 can point at and zoom into anything that moves within the detection area in order to enable the system to be able to identify a suspect by recording identifying features. Pong specifically states that their system overcomes the deficiencies of conventional surveillance systems by Pong's ability to resolve sufficient details of a suspect to identify them. In Pong, identifying a customer or suspect is of prime concern, and the concept that an attribute is determined would not be applied in Pong.

Presumably, the facial images that are obtained in <u>Pong</u> are compared against facial images previously stored in a database, perhaps on the transponder, to detect a match. Applicants' claimed invention is not a facial recognition system.

Further, <u>Pong</u> includes no disclosure or suggestion of determining an attribute group of a customer from information obtained from the image without determining a personal identity of a particular individual in the image. To the extent that <u>Pong</u> discloses customer facial recognition, <u>Pong's</u> invention must recognize the customer's face based on a particular individual because facial recognition could not be conducted without information of the particular individual.

<u>Kaneko</u> recognizes and analyzes a facial image and extracts data therefrom, such as the shape, the width and the color of a person's face. <u>Kaneko</u> takes that data and other personal data related to the user's age, gender, etc. and, based on that information, retrieves eyeglasses suitable to the features of the user's face and other features such as the user's age and gender. (<u>Kaneko</u>, col. 33, lns. 18-36). However, <u>Kaneko</u> is devoid of any teaching or suggestion of using the data obtained through image recognition to determine an attribute of a customer. The data disclosed in <u>Kaneko</u> is only used to select a pair of eyeglasses for a particular individual and is <u>not</u> used to determine an attribute of a customer.

The present invention, on the other hand, determines an attribute group from information obtained from the image without determining a personal identify of a particular individual in the image. For example, the present application teaches that an attribute may be determined by initially referring to image data of a customer to determine a height and then determining an age bracket from the determined height. Also, image data can be used to determine the customer's appearance, such as whether the customer is wearing a skirt, makeup, has long hair, etc., and then

determining the customer's sex from these decisions. Other attribute groups that can be determined are the time of day the customer normally shops, whether the customer shops alone or with others, etc. Thus, the present invention, as recited in independent claims 1, 5-6 and 24, determines an attribute group of a customer from both the image information obtained and information not based on a particular individual. By determining attributes of the customers, items can be associated with those certain attributes, and strategies can be developed to increase sales of various items.

Additionally, as recited in independent claims 1, 5-6 and 24, the present invention associates a customer's attribute data with data associated with a purchased item and stores that correlated data. This allows a sales trend to be developed and utilized for sales promotion activities. The customer's attribute can automatically be determined from the image information and the clerk's operation to input the attribute can be alleviated. Further, determining an attribute by a uniform criterion implemented by image information (without determining the personal identity of the individual) can effectively prevent varying decisions on the attribute, which the presently claimed invention is designed to overcome.

Additionally, Applicants submit that the Examiner is improperly combined the teachings of Pong and Kaneko in an attempt to arrive at applicant's claimed invention. Combining the facial image and extraction system of Kaneko used for selecting a pair of eyeglasses only, with the facial recognition and identification system of Pong, would render Pong unworkable for its intended purpose, namely, as a facial recognition and identification system. It is well settled that if a proposed modification renders the invention being modified unworkable for its intended

purpose, then there is no suggestion to make the proposed modification. *See* In re Gordon, 773 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

It is clear from the disclosure of Pong that facial recognition and identification is essential. This is especially true for the surveillance system embodiment which is disclosed at col. 13, lns. 36-47 of Pong. The Pong system is designed to identify a customer either by a preassigned customer number or by facial recognition. Presumably, the facial images that are obtained in Pong are compared against facial images previously stored in a database to detect a match. In any event, Pong requires positive identification of an individual.

To combine Pong with Kaneko, which does not positively identify an individual but, rather, extracts facial features to select a pair of eyeglasses, would clearly render Pong workable for its intended purpose, namely, as a type of facial recognition and identification system. A combination would result in Pong not positively identifying an individual, and thus would render Pong unworkable for its intended purpose. Thus, there is no suggestion or motivation to make the proposed modification to Pong, and the proposed combination of Pong and Kaneko is therefore improper.

Accordingly, Applicants submit that the proposed combination of Pong and Kaneko is improper and respectfully requests the withdrawal of the rejections based thereon. Additionally, even if the proposed combination were proper, such a combination does not result in each and every claim limitation of independent claims 1, 5-6 and 24, as discussed above.

Accordingly, for at least the above-identified reasons, independent claims 1, 5-6 and 24 are believed allowable over Pong and Kaneko, taken alone or in combination.

Dependent claims 25-30 depend cognately from independent claim 24, and add features which further remove the present invention from the prior art. Given at least the distinctions identified above, the dependent claims are believed allowable over the prior art and a separate discussion of the dependent claims will not be belabored for the sake of brevity.

§ 103 Claim Rejections - Claims 2-4 and 31-36

Claims 2-4 and 31-36 stand rejected under § 103(a) as obvious over Pong in view of Kaneko and further in view of U.S. Patent No. 5,331,544 to Lu et al. ("Lu"). Applicants respectfully traverse the Examiner's rejections for at least the following reasons.

Claims 2-4 and 31-36 depend cognately from independent claims 1 and 24, respectively. The deficiencies of Pong and Kaneko with respect to independent claims 1 and 24 have been previously noted. Lu neither discloses nor suggests these deficiencies. Lu discloses use of a facial recognition system to track purchasing activity. In Lu, the identity of a customer is determined through facial recognition so that purchases made by that particular customer can be tracked. In contrast, the present invention determines an attribute of a customer from information obtained from the image without determining the personal identity of the particular individual. Accordingly, claims 2-4 and 31-36 are believed allowable over the prior art.

Conclusion

Applicants' invention is a novel computer-readable medium and management system which includes features neither disclosed nor suggested in the prior art. Applicants' invention acquires both image information of a customer and data information of an item purchased by a customer, and correlates that information for recording in a database. In addition to obtaining

image information of a customer, the present invention determines an attribute group of the customer from information obtained from the image without determining a personal identify of a particular individual in the image. The prior art neither discloses nor suggests these features.
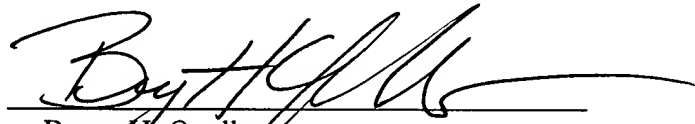
Thus, for at least the above-identified reasons, Applicants submit that claims 1-6 and 24-36 are allowable over the prior art of record. Reconsideration of pending claims 1-6 and 24-36, allowance and passage to issue are respectfully requested. Early notification to that effect is respectfully requested.

It is believed that this response requires a one (1) month extension of time. Accordingly, a Petition for a One Month Extension of Time and Form PTO-2038 authorizing payment of $120 by credit card are enclosed herewith. The Commissioner is hereby authorized to charge any underpayment or credit any overpayment associated with this communication to Deposit Account No. 02-4800. Should any issues remain, the Examiner is invited to contact the undersigned at the number listed below to advance prosecution of the case.

Respectfully submitted,

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